

We claim:

1. A compound of formula $X-Y-L-(W-Z)_n$, where n is 1, 2 or 3 and X , Y , L , W , and Z have the following definitions:

5 X : an endgroup which is able to develop strong chemical and/or physical interactions toward metal surfaces, comprising at least one acidic group X^1 , or salts thereof, or at least one hydrolyzable, Si-containing group X^2 ,

Y : a hydrocarbon group having 5 to 60 carbon atoms, comprising units which are linked linearly with one another and are of substantially identical kind,

10 L : a linking group, which if $n = 1$ is L^1 , if $n = 2$ is L^2 , and if $n = 3$ is L^3 , with L^1 , L^2 , and L^3 having the following definitions:

L^1 : a linearly linking group which joins a hydrophobic group Y to a hydrophilic group W and is selected from the group consisting of S , $-S-S-$, $-CO-O-$, $-O-CO-$, $-CO-NR^1-$, $-NR^1-CO-$, $-O-CO-NR^1-$, $-NR^1-CO-O-$, $-NR^1-CO-NR^1-$, and $-NR^1-$,

15 L^2 : a branching group which joins a hydrophobic group Y to two hydrophilic groups W and is selected from the group consisting of $-N<$, $-NR^1-CR^{1'}<$, $-CO-N<$, $-NR^1-CO-N<$, and $-CO-NR^1-CR^{1'}<$,

20 L^3 : a branching group which joins a hydrophobic group Y to three hydrophilic groups W and is selected from the group consisting of $-NR^1-C\equiv$, $-NR^1-CH_2-C\equiv$, $-O-C\equiv$, $-O-CH_2-C\equiv$, $-CO-NR^1-CH_2-C\equiv$, $-CO-NR^1-C\equiv$, $-CO-NR^1-CH_2-C\equiv$, $-CO-O-C\equiv$, and $-CO-O-CH_2-C\equiv$,

R^1 and $R^{1'}$, each independently being H or C_1 to C_4 alkyl,

W : a hydrophilic group, and

Z : an endgroup, being either a reactive endgroup Z^1 or a nonreactive endgroup Z^2 ,

and,

25 where L^1 is $-CO-O-$, the first endgroup X is not $-COOH$.

2. A compound as claimed in claim 1, wherein the acidic group X^1 is at least one group selected from the group consisting of $-COOH$, $-SO_3H$, $-OSO_3H$, $-PO(OH)_2$, $-PO(OH)(OR^2)$, $-OPO(OH)_2$, $-OPO(OH)(OR^2)$, and $-CR^3(NH_2)(COOH)$ or salts thereof, R^2 being an unbranched or branched C_1 to C_8 alkyl group with or without further substituents, and R^3 being H, a C_1 to C_6 alkyl group or the residues of naturally occurring amino acids.
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3. A compound as claimed in claim 2, wherein the acidic group X^1 is at least one group selected from the group consisting of $-\text{COOH}$, $-\text{PO}(\text{OH})_2$, and $-\text{OPO}(\text{OH})_2$ or salts thereof.
4. A compound as claimed in claim 1, wherein the hydrolyzable, silicon-containing group X^2 is a group $-\text{SiR}^4_3$, R^4 being Cl or a radical $-\text{OR}^5$ where R^5 is C_1 to C_6 alkyl.
- 5 5. A compound as claimed in any of claims 1 to 4, wherein the reactive group Z^1 is a group selected from the group consisting of $-\text{OH}$, $-\text{SH}$, $-\text{NH}_2$, $-\text{NHR}^6$, $-\text{CN}$, $-\text{NCO}$, epoxy, $-\text{CH}=\text{CH}_2$, $-\text{O}-\text{CO}-\text{CR}^7=\text{CH}_2$, $-\text{NR}^6-\text{CO}-\text{CR}^7=\text{CH}_2$, and $-\text{COOH}$, R^6 being H or C_1 to C_6 alkyl and R^7 being H or CH_3 .
- 10 6. A compound as claimed in claim 5, wherein Z^1 is a group selected from the group consisting of $-\text{OH}$, $-\text{SH}$, $-\text{NH}_2$, $-\text{NHR}^6$, and $-\text{COOH}$.
7. A compound as claimed in any of claims 1 to 4, wherein the nonreactive group Z^2 is a group selected from the group consisting of $-\text{H}$, $-\text{OR}^8$, $-\text{NR}^8\text{R}^9$, $-\text{COOR}^8$, and $-\text{CONR}^8\text{R}^9$, R^8 and R^9 independently being C_1 to C_6 alkyl.
8. A compound as claimed in any of claims 1 to 7, wherein the linking group L^1 is $-\text{CO}-\text{NR}^1-$.
- 15 9. A compound as claimed in any of claims 1 to 8, wherein the linearly linked units of the hydrocarbon group Y are units selected from the group consisting of $-\text{CH}_2-$ and $-\text{CH}_2-\text{CH}(\text{CH}_3)-$ and $-\text{CH}_2-\text{C}(\text{CH}_3)_2-$.
10. A compound as claimed in claim 9, wherein Y is a linear alkyl chain having 8 to 20 carbon atoms.
- 20 11. A compound as claimed in claim 10, wherein Y is a linear alkyl chain having 9 to 15 carbon atoms.
12. A compound as claimed in any of claims 1 to 11, wherein the hydrophilic group W is a group comprising C_2 to C_4 alkoxyate units.
- 25 13. A compound as claimed in claim 12, wherein the hydrophilic group W comprises 1 to 10 alkoxyate units.
14. A compound as claimed in claim 13, wherein the units number 1 to 5.
15. A compound as claimed in any of claims 12 to 14, wherein the units are ethoxyate units.
16. The use of a compound as claimed in any of claims 1 to 15 as a corrosion inhibitor.

17. The use of a compound as claimed in any of claims 1 to 15 as an adhesion promoter, primer, passivator or conversion coat former.
18. The use of a compound as claimed in any of claims 1 to 15 to treat metal surfaces.
19. The use as claimed in claim 18, wherein the metal comprises one or more selected from the group consisting of zinc, aluminum, magnesium, chromium, iron, nickel, and tin or alloys of these metals with one another or with other metals.
20. The use of a compound as claimed in any of claims 1 to 15 to produce monomolecular layers on the metallic surfaces.
21. A formulation for treating metal surfaces, comprising at least one compound as claimed in any of claims 1 to 15, a solvent or solvent mixture, and, optionally, further components.
22. A formulation as claimed in claim 21, comprising at least one compound having a reactive endgroup Z^1 and at least one compound having a nonreactive endgroup Z^2 .
23. A formulation as claimed in claim 21, wherein the compound further comprises metal particles.
24. A formulation as claimed in claim 23, wherein the metal particles are lamellae of Al and/or Zn.
25. A method of treating metal surfaces, which comprises contacting the metal surface with a formulation as claimed in any of claims 21 to 24.
26. A composite comprising at least one metallic layer, a layer (A) comprising at least one compound as claimed in any of claims 1 to 15, and a second layer (B).
27. A composite as claimed in claim 26, wherein the layer (A) is a monomolecular layer.
28. A composite as claimed in claim 26 or 27, wherein the second layer (B) is a paint coat.
29. A composite as claimed in any of claims 26 to 28, further comprising a pretreatment layer which has been applied to the metal.